FULL CONTENTS

[Claim(s)]

[Claim 1] The ID number input means for being compound image formation equipment which has an image formation means for forming a picture, and the management tool which manages the history of an image formation output according to ID information registered, and inputting the first user ID number, The first notice means for notifying the first ID number inputted from said ID number input means to said management tool, The code data which expresses the picture which should be printed from an external device, and the external means of communications for receiving the second user ID incidental to the data, A conversion information inputting means to input the conversion information for changing said second ID number into the third ID number of a form equivalent to said first ID number, An ID number conversion means to perform conversion to the third ID number from the second ID number based on said conversion information, A data-conversion means to change said received code data into bitmapped image data, Have the second notice means for notifying said third ID number to said management tool, and [said management tool] Compound image formation equipment characterized by outputting a **** enabling signal to said image formation means when the ID number notified by said each notice means is contained in ID information registered.

[Claim 2] It is compound image formation equipment characterized by permitting copying operation when said image formation means detects the **** enabling signal based on the notice of the first notice means from said management tool in Claim 1.

[Claim 3] It is compound image formation equipment characterized by starting the conversion operation of bitmapped image DETAHE by said data-conversion means when said image formation means detects the **** enabling signal based on the notice of the second notice means from said management tool in Claim 1 or 2.

[Claim 4] From said image formation means, in Claim 1 - any 1 clause of three, have the means of communications for notifying the information accompanying image formation in said management tool, and to it [said image formation means] It is compound image formation equipment which notifies the information accompanying image formation to said management tool, and is characterized by said management tool creating and saving management information based on the information accompanying said image formation while performing image formation operation.

[Claim 5] Compound image formation equipment characterized by using the combination of the domain name on a local area network, and a user name as the second ID number in Claim 1 - any 1 clause of four using local area network means of communications as said external means of communications.

[Claim 6] Compound image formation equipment characterized by registering the third ID number changed from the second ID number which received in Claim 5 into the management tool, and an inside **** case performing the notice for which **** operation is improper to a network user ID through the external means of communications.

[Claim 7] Compound image formation equipment characterized by canceling the received code data when the third ID number changed from the second ID number which received in Claim 1 - any 1 clause of six is not registered into the management tool.

[Claim 8] Compound image formation equipment characterized by using page description language (PDL) as code data expressing a picture in Claim 1 - any 1 clause of seven.

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the compound image formation equipment which has management equipment which manages the history of an image formation output according to ID information registered.
[0002]
[Description of the Prior Art] In the copy function of a copying machine, management of the copy number of sheets classified by section etc. was conventionally performed in the management equipment which manages a magnetic card and an ID number input.
[0003] Moreover, in the multifunction device having a facsimile function and a printer function in recent years, what can manage separately a FAX received output and printer output number of sheets is proposed.
[0004]
[Problem to be solved by the invention] However, in the above-mentioned conventional parallel, the section information of the user who performs a printer output by the data transmission from the outside was not managed, but there was a fault that unified control with a copy user could not be performed.
[0005] This invention aims at offering the compound image formation equipment which can unify and manage various kinds of image formation outputs for every user ID.
[0006]
[Means for solving problem] An image formation means for the compound image formation equipment of this invention to form a picture, The ID number input means for being compound image formation equipment which has the management tool which manages the history of an image formation output, and inputting the first user ID number according to ID information registered, The first notice means for notifying the first ID number inputted from said ID number input means to said management tool, The code data which expresses the picture which should be printed from an external device, and the external means of communications for receiving the second user ID incidental to the data, A conversion information inputting means to input the conversion information for changing said second ID number into the third ID number of a form equivalent to said first ID number, An ID number conversion means to perform conversion to the third ID number from the second ID number based on said conversion information, A data-conversion means to change said received code data into bitmapped image data, It has the second notice means for notifying said third ID number to said management tool, and said management tool is characterized by outputting a **** enabling signal to said image formation means, when the ID number notified by said each notice means is contained in ID information registered.
[0007] When the ID number inputted from the ID number input means by the above composition is attested by the management tool, copying operation is permitted and the **** information by copying operation is saved in a management tool. Moreover, when the user ID is changed into the user ID inside image formation equipment and it is attested by the management tool, **** of code data is permitted and, as for the **** demand from an external device, the **** information is saved in a management tool.
[0008] Since both are managed by the common ID number, they can manage copying operation and the **** operation from an external device in a common database.
[0009]
[The form of implementation of invention, and a work example] Drawing 1 is the mimetic diagram showing the whole work-example system configuration of this invention. This is the system which connected them with one public circuit to two independent networks, and explains each device and an outline of operation below.
[0010] PC101 are the computer which a user usually uses and are a device which exchanges an E-mail with other computers which created the document or were connected to the network (henceforth LAN) 112. In addition, it has the same function also about PC109.
[0011] PC102 are the same as that of said PC101, it connects with LAN112, and the scanner unit 103 and the printer unit 104 are connected by the general interface of the computer with which PC102 are equipped further.
[0012] A scanner unit 103 is used for sticking the picture read by the scanner unit 103 on the document created on PC102, or uses a printer unit 104 for printing out the document created on PC102.
[0013] The system of this PC102, scanner unit 103, and printer unit 104 has the simple copy function which prints out the picture read by the scanner unit 103 by a printer unit 104 by operation from PC102.
[0014] The copy machine 107 has a large-sized liquid crystal touch panel, is image formation equipment connected to LAN112, and has a scanner function and a printer function. And as a simple substance, it has a copy function and also has a function as an electronic filing system by connecting the optical magnetism DISUKUYU knitting 114.

Furthermore, the copy machine 107 also has printer functions, such as a computer, and prints the document created in said PC101 or PC102 grade by a copy machine developing the command data for image formation to the image data of a bit map through LAN112. In addition, it has the same function also about the copy machine 110.

[0015] The FAX machine 108 is image formation equipment which has a large-sized liquid crystal touch panel, and is connected to LAN112, and is connected to the public circuit 116. And as a simple substance, it has a simple copy function and the facsimile function of G3 specification, and the role of the gateway of another LAN113 through the public circuit 116 is also played. In addition, it has the same function also about the FAX machine 111.

[0016] Next, based on drawing 2 , the common portion of each image formation equipment mentioned above is explained.

[0017] CPU201 are a microprocessor which manages control of the whole image formation equipment, and are operating by the real-time OS.

[0018] FAX202 are a mass hard disk which accumulates two or more applications when said CPU201 operate, and are under management of above-mentioned CPU201.

[0019] Memory 203 is work memory when CPU201 operate, and can be accessed at high speed from CPU201.

[0020] High-speed CPU buses 204 are CPU201 and FAX202 which were mentioned above, memory 203, and Bath which connects each functional unit, and are for transmitting the data which CPU201 processed to each functional unit, or transmitting data at high speed between [each] functional units (DMA transfer). Generally VL Bath or PCI Bath is raised.

[0021] RIP205 are a functional unit which receives the image formation command inputted from the external interface connected with a computer, and changes into a bitmapped image according to the contents. An image formation command is inputted from high-speed CPU bus 204, and outputs an image picture to the high-speed image bus 216. PostScript, PCL, LIPS, CaPSL, etc. are raised as a kind of RIP.

[0022] Image Processing Division 206 is a functional unit which performs the filtering measures against image pictures, such as smoothing processing and edge processing, according to the processing instruction according the image picture inputted from the high-speed image bus 216 to directions of CPU201.

[0023] In addition, as a function of Image Processing Division 206, it also has a character recognition (OCR) function and the image separate function to separate the character section and the image section, to the picture inputted from the high-speed image bus 216.

[0024] As opposed to the image picture into which compression / extension 207 was inputted from the high-speed image bus 207 Apply compression by the picture compression methods, such as MH, MR, MMR, and JPEG, and High-speed CPU bus 204 Or that compressed data is again sent out to the high-speed image bus 216, or that compressed data inputted from those two Bath is conversely elongated according to the method compressed with this functional unit, and it has the function sent out to the high-speed image bus 216.

[0025] A bus bridge 208 is a bus bridge controller for connecting high-speed CPU bus 204 and low-speed CPU bus 209, and absorbs the difference of the process speed between Bath. CPU201 which operate at high speed by minding this bus bridge 208 can access the functional unit which operates at the low speed connected to low-speed CPU bus 209.

[0026] Low-speed CPU bus 209 is the bus arrangement whose transfer rate is slower than said high-speed CPU bus 204, and is Bath to connect the comparatively late functional unit of a throughput. Generally an ISA bus etc. is raised.

[0027] A modem 210 is the functional unit which intervenes the public circuit 211 and low-speed CPU bus 209. It has the function modulated so that the digital data sent from low-speed CPU bus 209 can be poured to a public circuit, and the function to change the modulated data which has been sent from the public circuit into the digital data which can be processed within image formation equipment.

[0028] LAN212 are a functional unit for connecting this image formation equipment to an in-house network, and are for performing ****** of data with an in-house network. Generally Ethernet etc. is raised.

[0029] The management equipment interface 214 is a functional unit for connecting this image formation equipment and management equipment 222. It is the functional unit used for sending control command from this image formation equipment to management equipment, or returning an enable signal from management equipment to it to this image formation equipment through this interface 214.

[0030] [the panel interface 215 / in the place which exchanges various control signals with the control unit 221 in image formation equipment] It is the unit which performs resolution conversion for telling the signal of input

switches, such as a key arranged at the control unit 221, to CPU201, or displaying the image data created in RIP205, the Image Processing Division section 206, and compression/extension section 207 on the liquid crystal display section in a control unit 221.

[0031] The high-speed image bus 216 is Bath for connecting the picture input/output bus in various image generation units (RIP205, Image Processing Division 206, compression/extension 207), and the scanner interface 217 and a printer interface 219 mutually. Control of this Bath is not put under management of CPU201, but is controlled by a bus controller, and performs data transfer.

[0032] A scanner unit 218 is visible image reading equipment equipped with manuscript power feed equipment, and has the CCD color sensor of three lines of RGB, or the monochrome CCD line sensor of one line. The image data read by this scanner unit 218 is transmitted to the high-speed image bus 216 by the scanner interface unit 217.

[0033] In the scanner interface unit 217 [the image data read by said scanner unit 218 / with the contents of the processing in a subsequent process] It has the function to perform optimal binarization, and to perform serial/parallel conversion united with the data width of the high-speed image bus 216, or to change the trichromatic color information of read RGB into the data of CMYBk.

[0034] A printer unit 220 prints the image data received from the printer interface unit 219 as visible image data on an archival paper. The bubblejet printer which prints on an archival paper using a bubble jet method, and the laser beam printer using the electrophotographic technology which forms a picture on a photoconductor drum using a laser beam, and forms a picture in an archival paper are raised to a printer unit 220. There are a monochromatic thing and a color laser beam printer by CMYBk in a laser beam printer.

[0035] [the printer interface unit 219] It is what transmits the image data sent from the high-speed image bus 216 to a printer unit. It has the bus width conversion function changed into the bus width united with the gradation of the printer which it is going to output from the bus width of the high-speed image bus 216, and a function for absorbing the difference of the print speed of a printer, and the transfer rate of the image data of the high-speed image bus 216.

[0036] A control unit 221 has the touch-panel input unit stuck on the liquid crystal display section and the liquid crystal display section, and two or more hardkeys. The signal inputted by the touch panel or the hardkey is told to CPU201 through the panel interface 215 mentioned above, and the liquid crystal display section displays the image data sent from the panel interface 215. A functional display, image data, etc. in operation of this image formation equipment are displayed on the liquid crystal display section.

[0037] Next, the management method of the copy printed output information by an ID number which is a main part in this example is explained.

[0038] (a) Explain the procedure of registering an ID number from ID number registration **** from a control unit, and a control unit 221, according to the flow chart shown in drawing 3 .

[0039] First, in S101, a push on the ID key will display a selection picture (F101) as shown in (1) of drawing 7 in a control unit 121. And in S102, if "registration of an ID number" is chosen and the O.K. key is pressed, it will become an ID number input screen (F102) as shown in (2) of drawing 7 .

[0040] Next, four digits are inputted with a ten key, by S104, the O.K. key is pressed and an ID number is decided S103. Next, in S105, after judging whether there is any ID number registered further and choosing by the **** key by S106 in a certain case, it returns to S103 and a number is inputted again.

[0041] Moreover, when there is nothing, an ID number is registered, after pressing the ID key and ending an ID number registration picture by S107. In S108, the registered ID number is notified to management equipment 222 through I/F214, and is saved at the non-volatile memory in management equipment 222.

[0042] The registration sequence of an ID number is ended as mentioned above.

[0043] (b) Explain the procedure of registering a network user ID from the network user ID registration control unit 121 from a control unit, according to the flow chart shown in drawing 4 .

[0044] First, in S201, "registration of a network user ID" is chosen in the above-mentioned S102. In S202, a character input screen (F103) as shown in (3) of drawing 7 is displayed. Here, the input of the alphabet and a sign can be chosen by pushing ON KAMODOKI. Moreover, a number can be inputted from a ten key. And a network user ID is inputted by such an input means.

[0045] Next, in S203, the O.K. key is pressed and a network user ID is decided. The ID number registered into the interior is displayed in S204 (F104).

[0046] If the ID number corresponding to a network user ID is chosen by the **** key and the O.K. key is pressed here, a corresponding ID number will be decided.

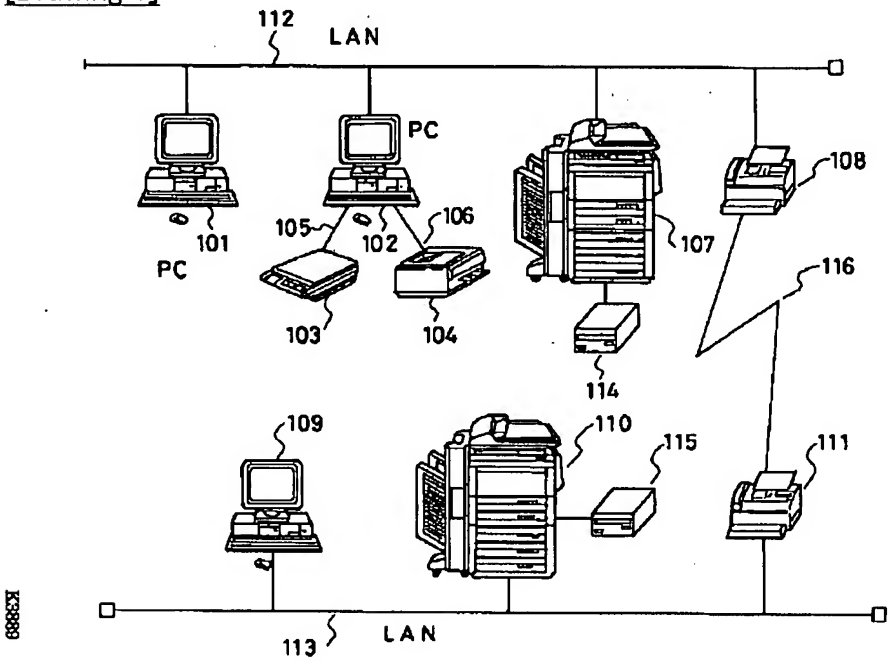
[0047] Furthermore, when there is a network user ID who registers, operations from (S205) and S202 to S204 are repeated.
[0048] Next, in S206, the ID key is pressed, a registration picture is ended and the table of the internal ID number corresponding to the network user ID and it which were inputted is saved at the non-volatile memory in the copy machine 107.
[0049] The registration sequence of a network user ID number is ended as mentioned above.
[0050] (c) Input an ID number from the copy operation control unit 121 by an ID number input, and explain the procedure of performing copy operation, according to the flow chart shown in drawing 5 .
[0051] First, the message to which an ID number input as shown in (5) of drawing 7 is urged is displayed on the copy operation screen of the copy machine 107 in the ID number waiting state of S301 (F105).
[0052] If a user inputs a four-digit number by S302, in S303, the copy machine 107 will transmit the inputted ID number to management equipment 222 through I/F214.
[0053] [management equipment 222 / reception waiting state / of S311 / ID number] if an ID number is received by S312 When it judges whether there is any match in the ID number into which this ID number that received is registered (S313) and there is a match, the enable signal to the copy machine 107 in I/F214 is activated (S314). in addition -- the case where there is no match -- the enable signal to the copy machine 107 -- non -- it returns to S311, activating (S315).
[0054] In S304, if the copy machine 107 detects that the enable signal became active, the message of the purport that it can copy to a control unit 221 will be displayed, and copy operation will be received (S305). Thereby, in S306, if a user performs copy operation and starts an output, the copy machine 107 will notify the copy conditions and output count signal to management equipment 222 through I/F214.
[0055] Management equipment 222 updates the management information corresponding to the ID number currently received in S316 according to the notified information.
[0056] By the copy machine 107, after copy operation is completed in S307, a user presses the ID key and notifies an end. And if the ID key is pressed, in S308, the copy machine 107 will notify the end of copy operation to management equipment 222 through I/F214.
[0057] if management equipment 222 receives the end of a copy -- the enable signal in I/F214 -- non -- it activates (S317).
[0058] the copy machine 107 -- an enable signal -- non -- it checks having become active and returns to the ID number input screen of S301 (S309).
[0059] The copy sequence according to ID watch input as mentioned above is ended.
[0060] (d) Explain the procedure which outputs document data from PC connected to the procedure network printed via a network from PC according to the flow chart shown in drawing 6 .
[0061] In S401, the copy machine 107 is in the state of the waiting for data receiving, and the transmittal to the document copy-of-data machine 107 which the user created by PC101 is started by S402 by the print start instruction by a user. Moreover, a network user ID is notified to the copy machine 107 from PC101 with a document data transfer.
[0062] The copy machine 107 is searched with S403 from the table which is having the notified network user ID registered. And as a result of searching, when a user ID in agreement exists, the ID number corresponding to (S404) and it is pulled out (S405).
[0063] In S406, the copy machine 107 transmits the pulled-out ID number to management equipment 222 through I/F214.
[0064] In the ID number registered if management equipment 222 is in the state of the waiting for ID number reception in S414 and an ID number is received by S415 If there are some which were in agreement with the received ID number (S416), the enable signal to the copy machine 107 in I/F214 will be activated (S417). in addition -- the case where there is no match -- the enable signal to the copy machine 107 -- non -- it returns to S414, activating (S418).
[0065] The copy machine 107 will start the printing job of document data, if an enable signal becomes active (S407) (S408).
[0066] In S409, if printing starts and a form is outputted, printing conditions and an output count signal will be notified to management equipment 222 through I/F214. Management equipment 222 updates the management information corresponding to the ID number currently received in S419 according to the notified information.
[0067] Moreover, in S410, the copy machine 107 transmits an end of operation to management equipment 222

through I/F214, after printing is completed. if management equipment 222 receives the end of printing -- an enable signal -- non -- it activates (S420).
[0068] the copy machine 107 -- an enable signal -- non -- it checks having become active and returns to the idle state of S401 (S411).
[0069] Moreover, as a result of collating a user ID by S404 in the copy machine 107, when a user ID in agreement does not exist, Or when an enable signal does not become active to ID which transmitted to management equipment 222, the message for which a printing start is improper is transmitted from the copy machine 107 to PC101 (S412). Moreover, about the received data of the same job, all are canceled including a part to have received after it, without ****(ing) (S413).
[0070] The printing sequence via a network is ended as mentioned above.
[0071] As explained above, in the management equipment connected to the copy machine, the unified control of databases, such as **** output number of sheets, is realizable based on a common ID number to the user who performs copy operation, and the user who performs printing from PC on a network.
[0072] In addition, in an above-mentioned example, although the translation table for changing into ID inside a copy machine from a network user ID is prepared in the interior of a copy machine and the copy machine was made to perform conversion, it is also possible to perform such conversion by other methods.
[0073] For example, a translation table is prepared on other computers connected to the network, and you may make it make it function as an ID number server.
[0074] Here, a copy machine notifies the network user ID who received to an ID number server. Based on the translation table currently held, an ID number server changes the notified network user ID into the ID number inside a copy machine, and notifies the result at a copy machine. Moreover, a conversion error is notified when an applicable ID number does not exist.
[0075] A copy machine transmits the ID number notified from the ID number server to management equipment. From an ID number server, when a conversion error is notified, the same error processing as an above-mentioned example is performed. In addition, other operation is the same as that of an above-mentioned example.
[0076]
[Effect of the Invention] As explained above, according to this invention, in the compound image formation equipment which has a printer function, the same ID management as a copy function can be applied also to a printer function, and a counter can be managed in a common database.

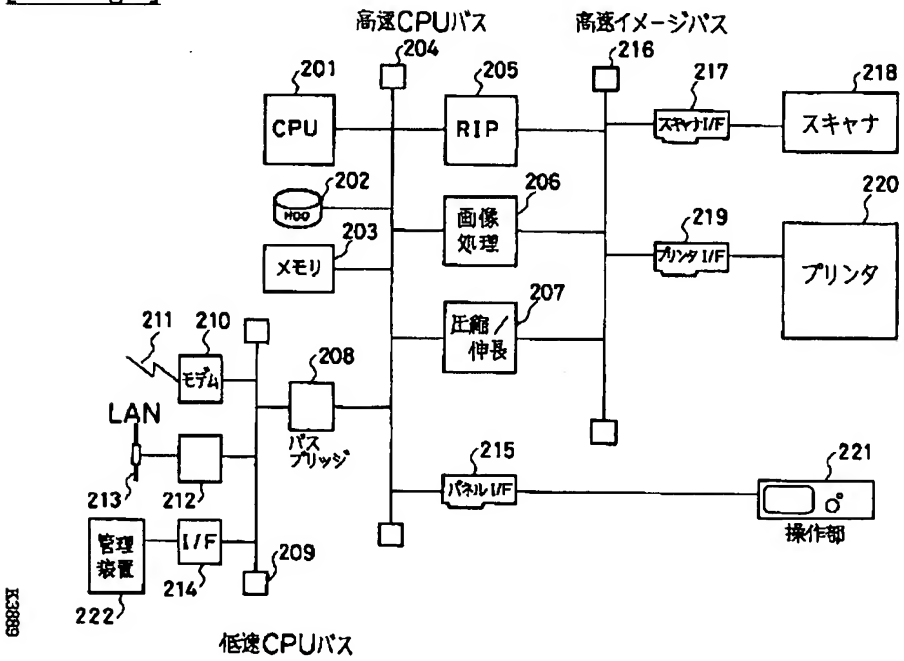
[Brief Description of the Drawings]
[Drawing 1] It is the mimetic diagram showing the system configuration in the work example of this invention.
[Drawing 2] It is the block diagram showing the composition of the intersection of each image formation equipment formed in the system of the above-mentioned work example.
[Drawing 3] It is the flow chart which shows the ID number registration procedure from the control unit in the above-mentioned work example.
[Drawing 4] It is the flow chart which shows the network user ID registration procedure from the control unit in the above-mentioned work example.
[Drawing 5] In the above-mentioned work example, it is the flow chart which shows the procedure of inputting an ID number from a control unit and performing copy operation.
[Drawing 6] In the above-mentioned work example, it is the flow chart which shows the procedure which outputs document data from PC connected to the network.
[Drawing 7] It is the explanatory view showing changes of the operation screen in the above-mentioned work example.
[Explanations of letters or numerals]
101, 102, 109 -- PC,
103 -- Scanner unit,
104 -- Printer unit,
107, 110 -- Copy machine,
108, 111 -- FAX machine,
112 -- LAN,

201 -- CPU,
218 -- Scanner,
220 -- Printer,
221 -- Control unit,
222 -- Management equipment.

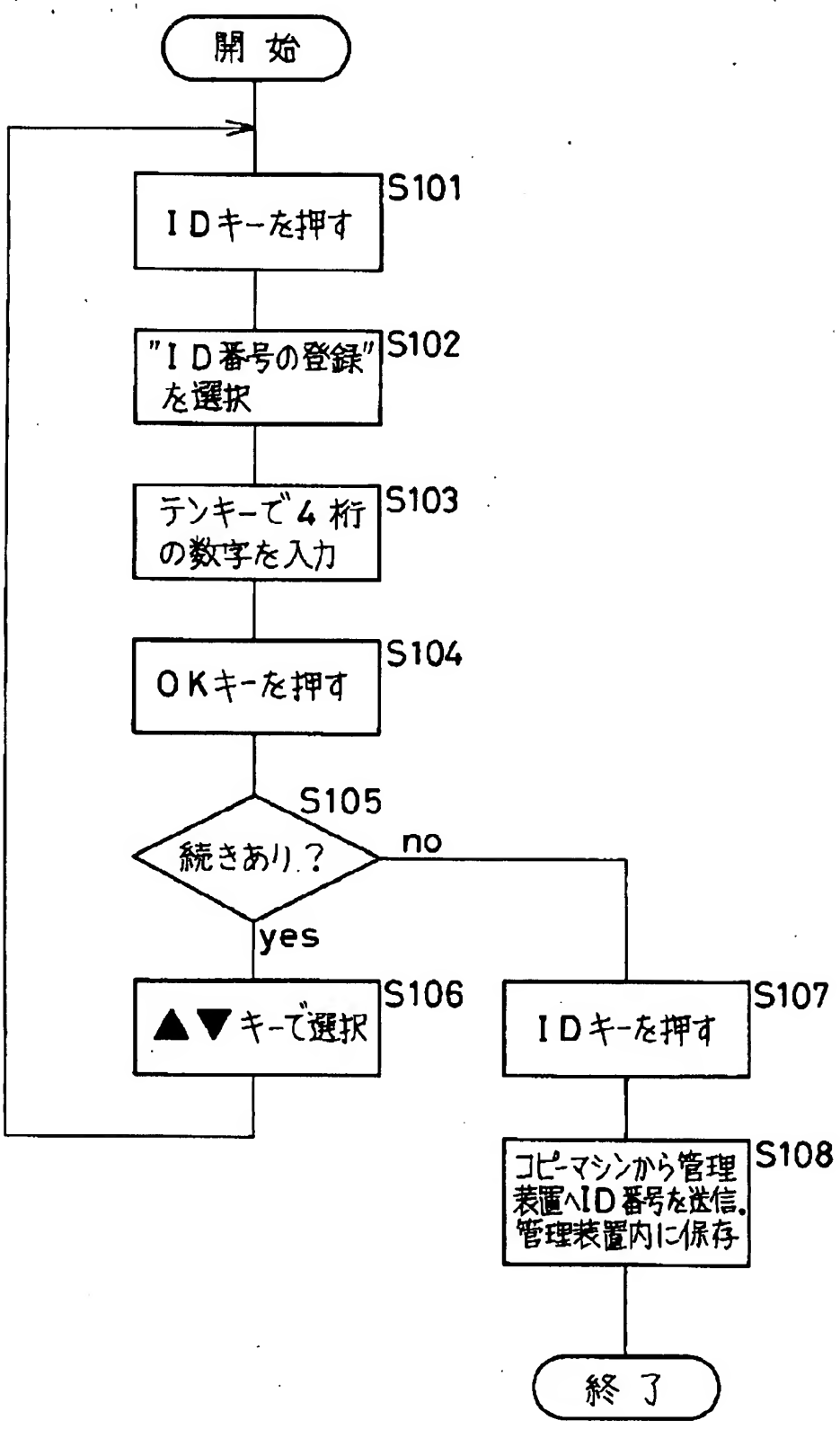
[Drawing 1]



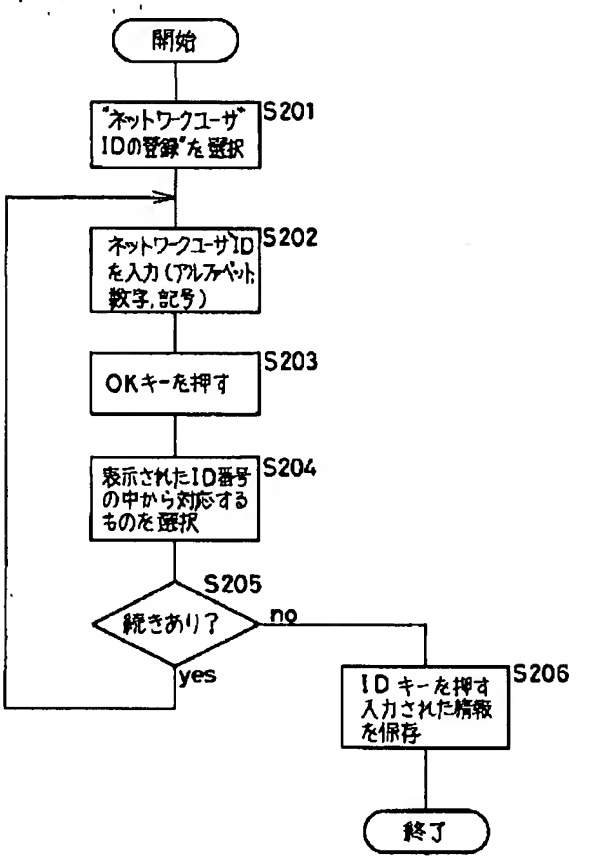
[Drawing 2]



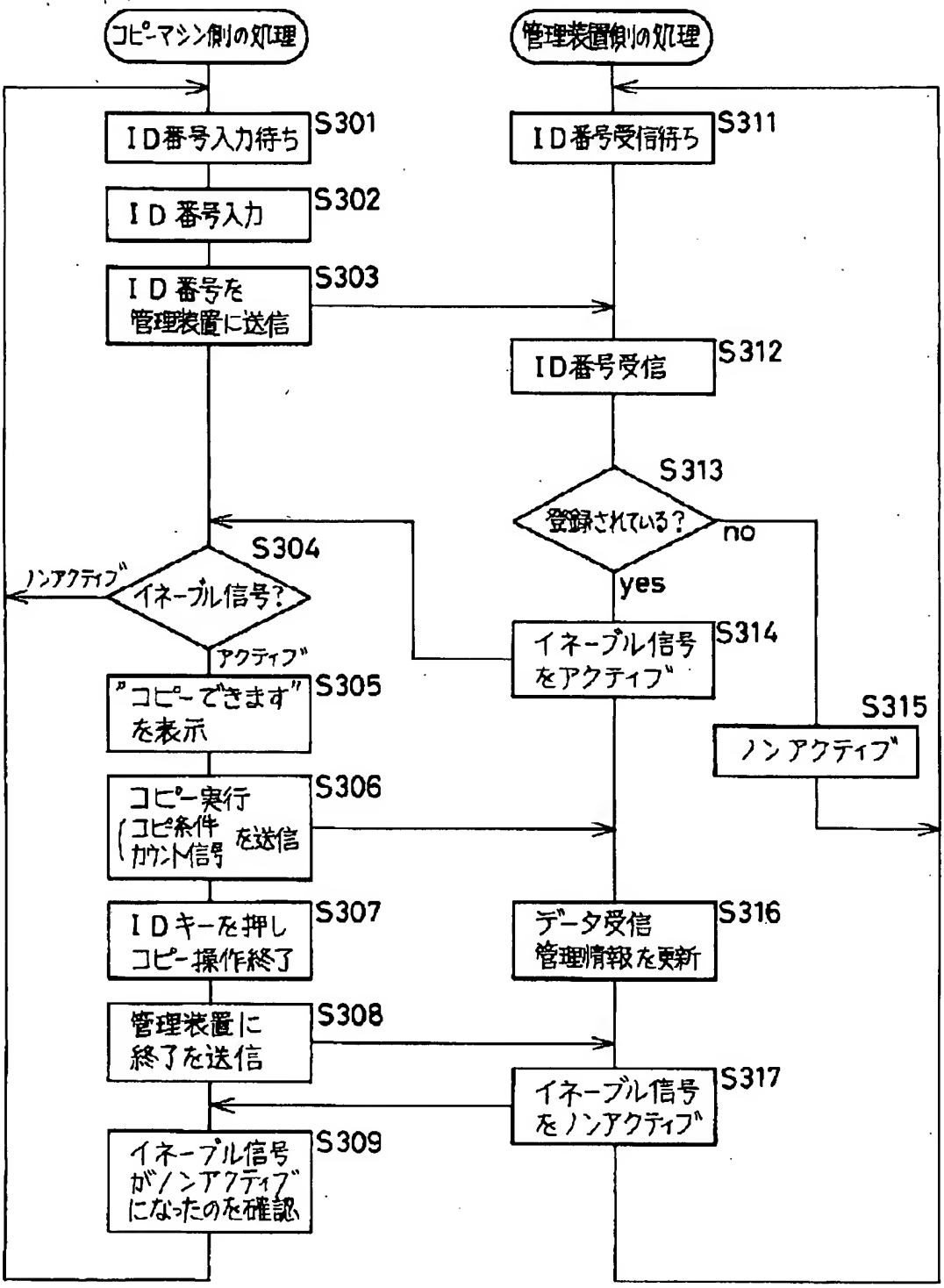
[Drawing 3]


開 始
IDキーを押す
S101
"ID番号の登録"を選択
S102
テンキーで4桁の数字を入力
S103
OKキーを押す
S104
S105
続きあり？
no
yes
▲▼キーで選択
S106
IDキーを押す
S107
コピーマシンから管理装置へID番号を送信。管理装置内に保存
S108
終 了
K3889

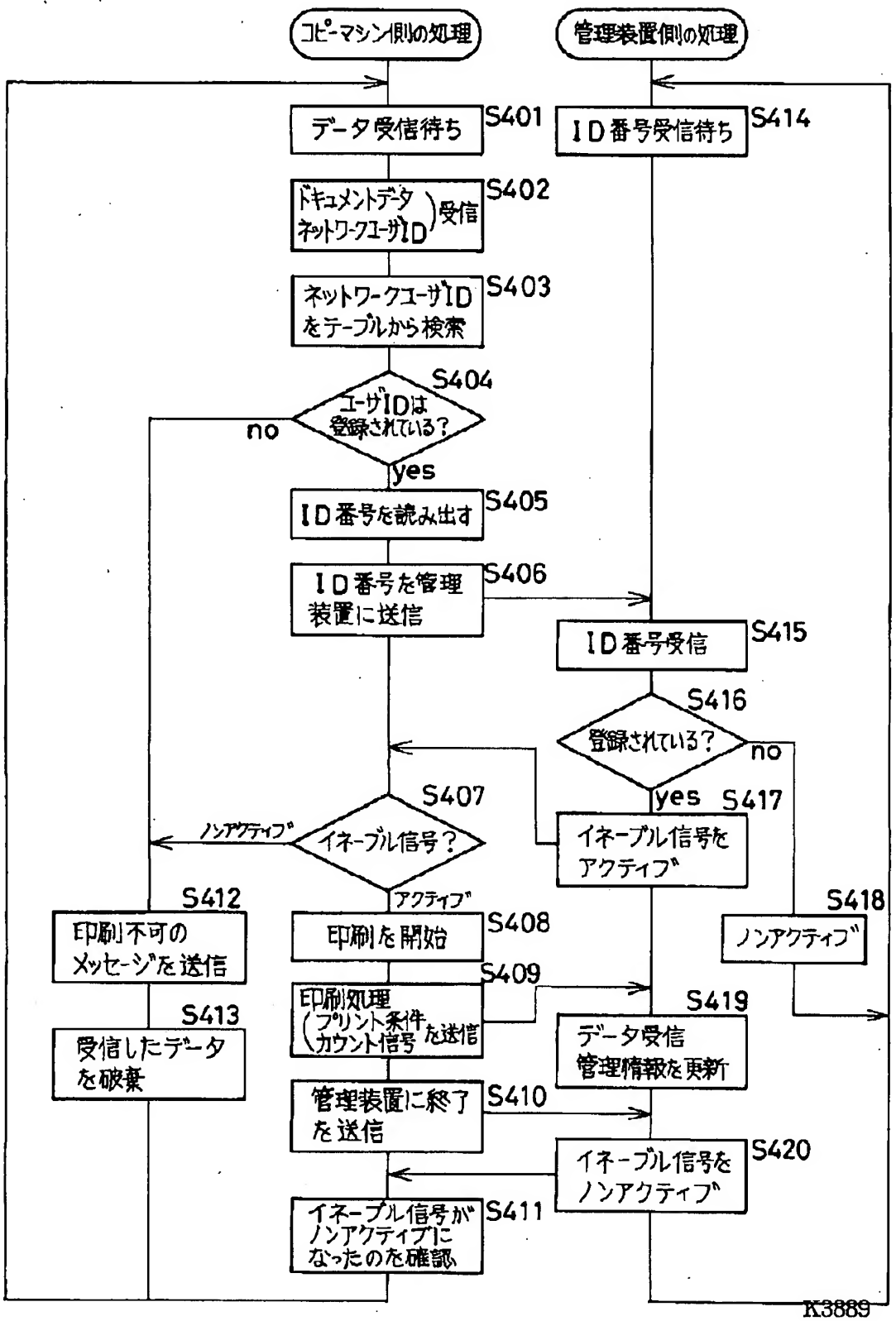
[Drawing 4]


開始
"ネットワークユーザ"IDの登録"を選択
S201
ネットワークユーザIDを入力(アルファベット,数字,記号)
S202
OKキーを押す
S203
表示されたID番号の中から対応するものを選択
S204
S205
続きあり?
no
yes
IDキーを押す入力された情報を保存
S206
終了
K3889

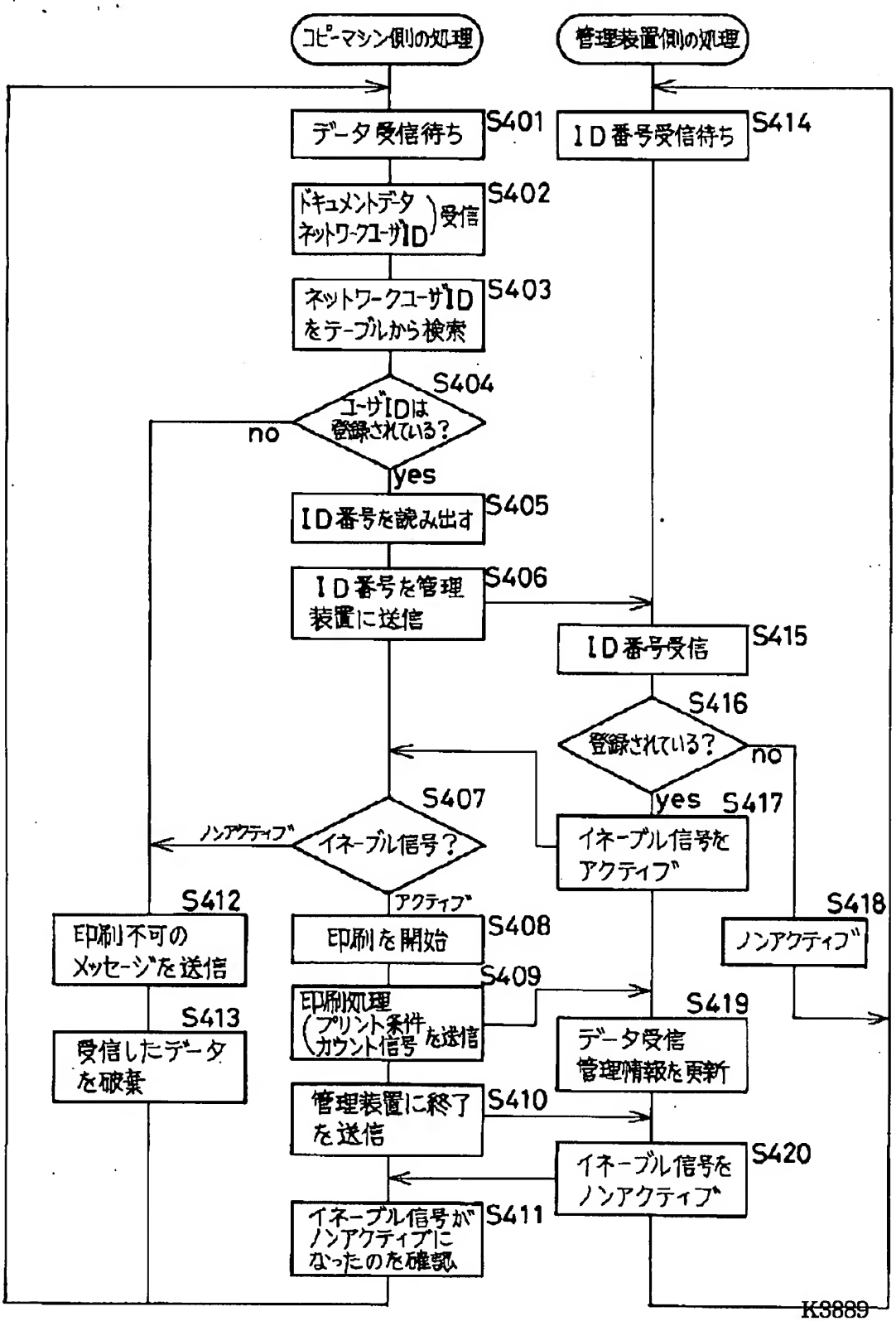
[Drawing 5]


コピーマシン側の処理
管理装置側の処理
ID番号入力待ち
S301
ID番号入力
S302
ID番号を管理装置に送信
S303
ID番号受信待ち
S311
ID番号受信
S312
S313
登録されている?
no
yes
S304
ノンアクティブ
イネーブル信号?
アクティブ
イネーブル信号をアクティブ
S314
"コピーできます"を表示
S305
S315
ノンアクティブ
コピー実行(コピー条件カウント信号)を送信
S306
IDキーを押しコピー操作終了
S307
データ受信管理情報を更新
S316
管理装置に終了を送信
S308
イネーブル信号をノンアクティブ
S317
イネーブル信号がノンアクティブになったのを確認
S309
K3889

[Drawing 6]


コピーマシン側の処理
管理装置側の処理
データ受信待ち
S401
ID番号受信待ち
S414
ドキュメントデータ ネットワークユーザID 受信
S402
ネットワークユーザID をテーブルから検索
S403
ユーザIDは 登録されている?
S404
no
yes
ID番号を読み出す
S405
ID番号を管理 装置に送信
S406
ID番号受信
S415
登録されている?
S416
no
yes
S417
イネーブル信号を アクティブ
ノンアクティブ
イネーブル信号?
S407
アクティブ
印刷不可の メッセージを送信
S412
印刷を開始
S408
S418
ノンアクティブ
印刷処理 (プリント条件 カウント信号 を送信
S409
S419
データ受信 管理情報を更新
受信したデータ を破棄
S413
管理装置に終了 を送信
S410
イネーブル信号を ノンアクティブ
S420
イネーブル信号が ノンアクティブに なったのを確認
S411
K3889

[Drawing 7]



[Translation done.]